

PHILIPS**Model N4307**

General Description: This model is basically similar to the Stella Model ST9123A which is described later in this volume. It has a simplified input stage with a single input/output socket and T₁ is omitted, the signal being applied direct to the base of T₂ through the blocking capacitor.

PHILIPS**Model N4308**

General Description: This model is electrically similar to the Stella Model ST9123A which is described later in this volume.

PHILIPS**Model LFH0085**

General Description: The LFH0085 "Pocket Memo" is a miniaturised, battery operated, cassette loaded, dictation machine. It is completely self contained; the battery, micro-cassette and combined microphone/loudspeaker all being housed within the pocket sized casing. A socket is provided for the use of stethoscope headphones, if desired in lieu of the internal loudspeaker. Provision is also made for the re-recording of recorded matter on to a Philips EL3581, EL3582 or LFH0084 dictation machine by means of an inter-connecting dubbing (copying) lead.

Battery: 9 volt (PP3 or equivalent), at 35 mA approx.

Battery Check: The battery should be checked periodically to see if it still provides sufficient voltage. To do this, depress the top of the side rocker switch and press the battery check control (above volume control). If an audible tone is heard from the loudspeaker the battery is still good.

Dismantling

Case Removal: Remove battery and tape cassette. Withdraw plastic cap from headphone socket. Remove screws from back and top. Lay machine face down, depress record button then lift off the rear casing. Ease internal assembly upwards, free from front casing. Remove safety button and foam rubber damping pad for safe keeping. Reassemble in the reverse order. Ensure that battery leads are positioned to lie in the slots provided.

Removal of Printed Panel: Set record button and rocker switch to the rest position or to the position required for test. Note (or mark) position of motor switch (S₁) slider for future reference, then slacken off screw securing actuator bracket and disengage bracket from slider. Free lead to headphone

General Description: These models, utilising an electrically similar chassis, are four-track, two-speed, mains-operated, tropicalised tape recorders, employing ten transistors and three diodes. Recording facilities include signal input mixing, loudspeaker or headphone monitoring and a meter-type recording level indicator. Provision is made for using the recorder as a microphone, radio, or pick-up amplifier and, when used in conjunction with the "Stereo" pre-amplifier EL3787A/00A etc., Stereo playback/Multiplay/Duoplay is also possible.

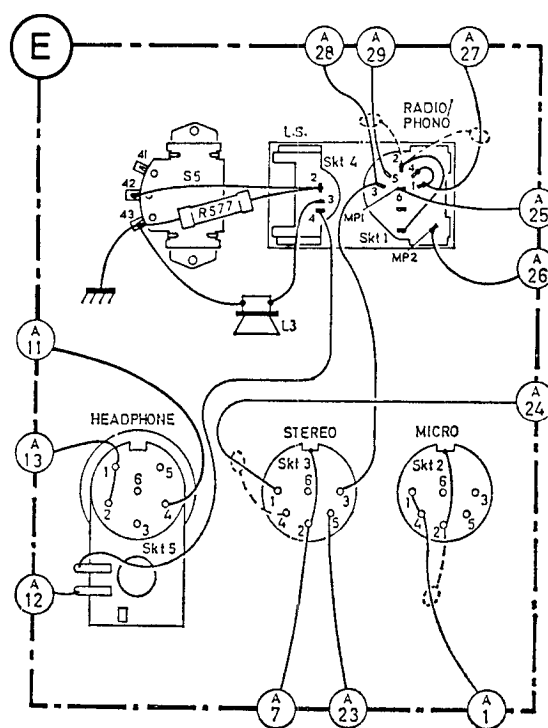
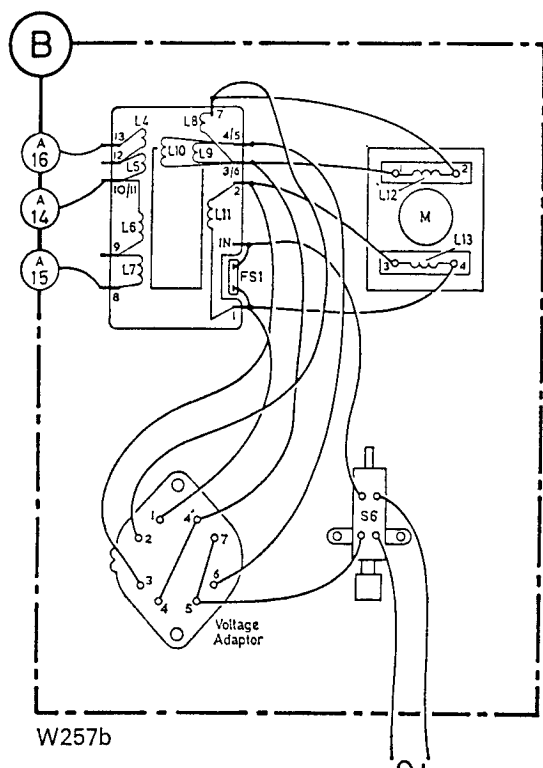
Mains Supply: 110, 127, 200–250 volts A.C.; Frequency.

Response: 60–14,000 Hz at $3\frac{3}{4}$ i.p.s., 80–8000 Hz at $1\frac{7}{8}$ i.p.s.

Inputs: Skt1—Radio (diode). Pins 1/4 and 2.—2 mV into 20 K.—Pick-up. Pins 3 or 5 and 2.—100 mV into 1 M. Skt. 2—Microphone. Pins 1/4 and 2.—0.2 mV into 2 K.

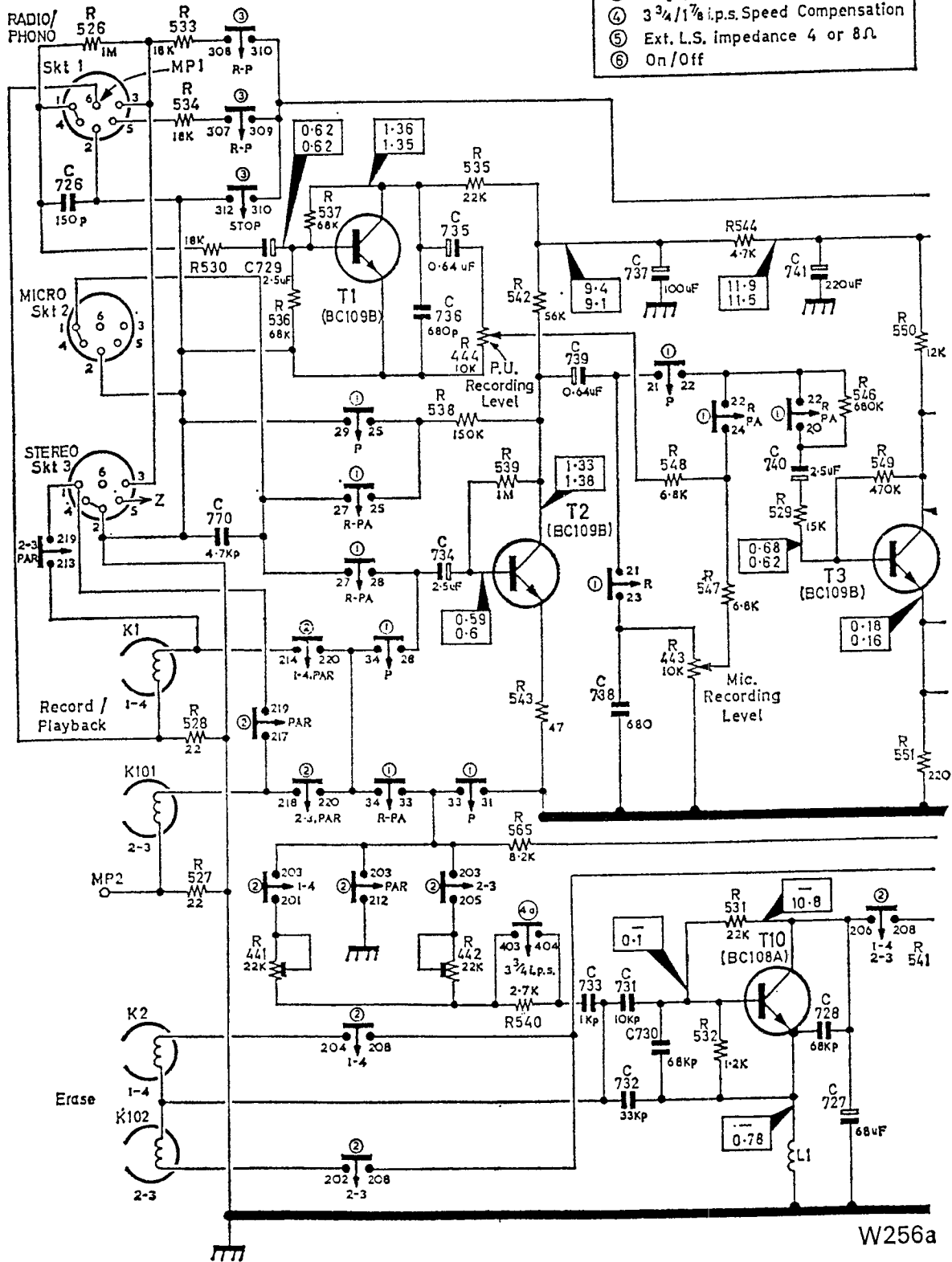
Outputs: Skt1—Line (diode) Pins 3, 5 and 2—750 mV across 20 k Ω ; Skt3—Stereo; Skt4—Ext. L.S. Impedance 4 or 8 Ω , 4 watts; Skt5—Headphones Pins 4 and 1/2.

Case Removal: Remove lid, pull off the four control knobs, speed change knob and undo the four (some models have five) ornamental screws. Take off cover plate, disconnect the speaker leads and case screening lead (these are usually slide-on connectors but in some cases may be soldered) and lift out chassis. The chassis can be operated out of the cabinet, providing normal care



TAPE RECORDER SERVICING

SWITCH	FUNCTION
①	Record & PA/Playback
②	-1-4, 2-3, Parallel
③	Play (R.P.) / Stop
④	$3\frac{3}{4}/1\frac{1}{2}$ i.p.s. Speed Compensation
⑤	Ext. L.S. impedance 4 or 8 Ω
⑥	On/Off



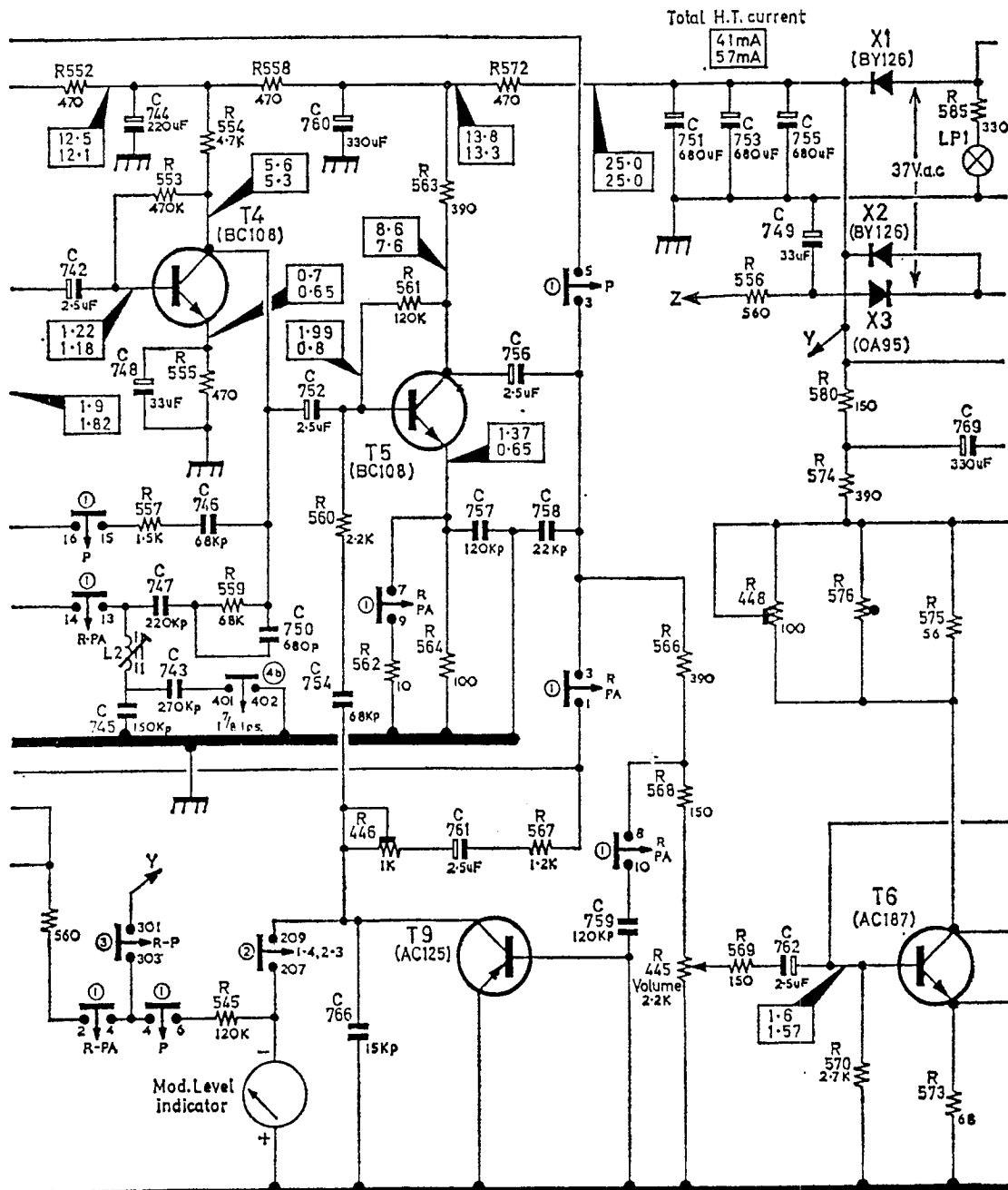
W256a

STELLA

is taken to keep the chassis level and a speaker of correct impedance is connected. Reassemble in the reverse order.

On some models R550 may be 39K
 " " " R564 " " 82
 " " " R560 " " 4.7K

Switch coding	
R	Record
P	Playback
PA	Public Address
STOP	Play key up
Switches close only for functions indicated	



W256b

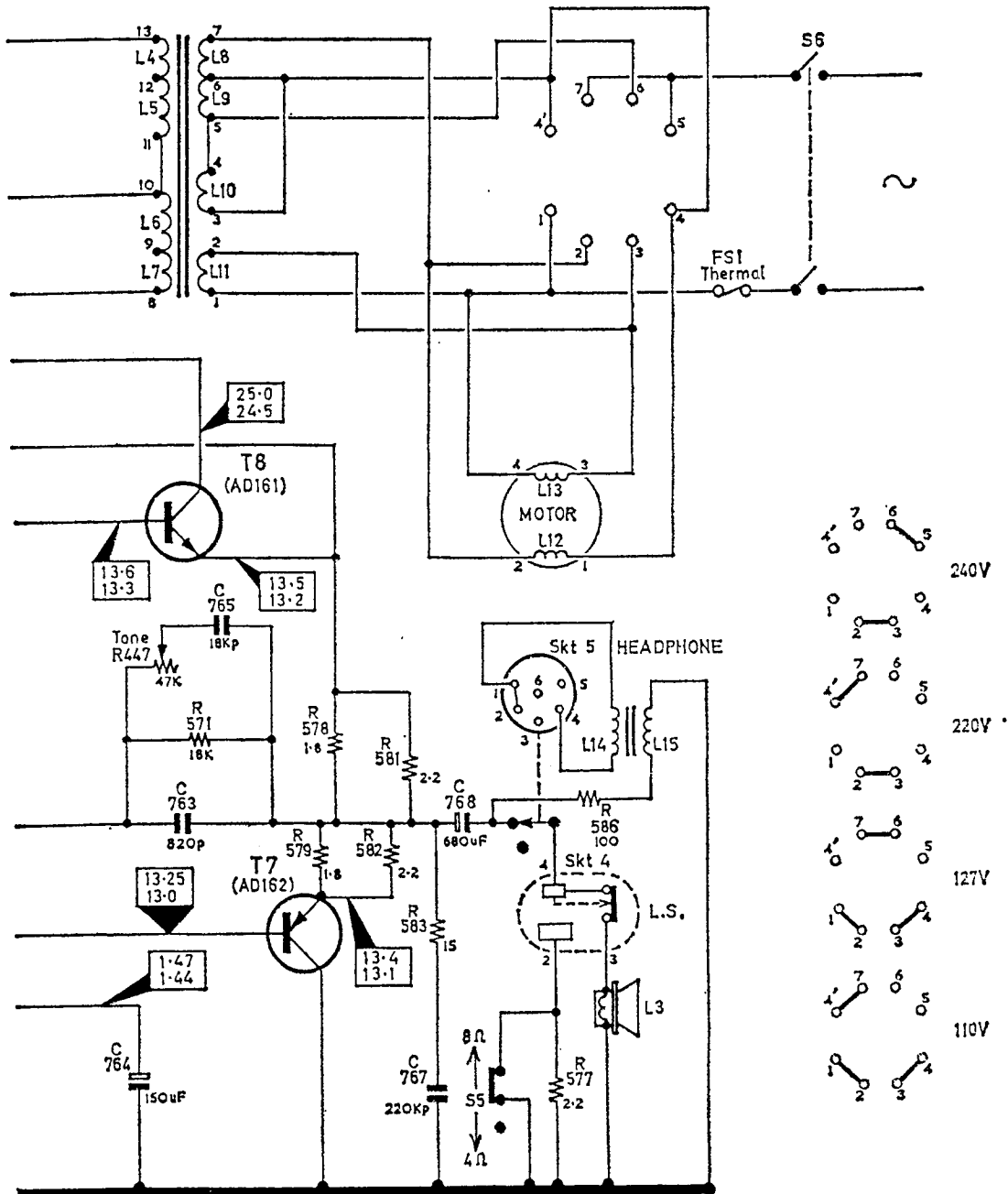
TAPE RECORDER SERVICING

Printed Panel Removal: Access to the printed panel may be obtained, after setting the track switch to the "PAR" position and the tape speed to $1\frac{7}{8}$ i.p.s., by undoing the four screws securing the printed panel frame to the chassis. The frame and printed panel can be removed to the extent of the

Sockets viewed on
solder tags.

All voltages taken, unless otherwise stated, with respect
to chassis using a 100K Ω /V meter.
Mains input 240V a.c. to 240V tap.

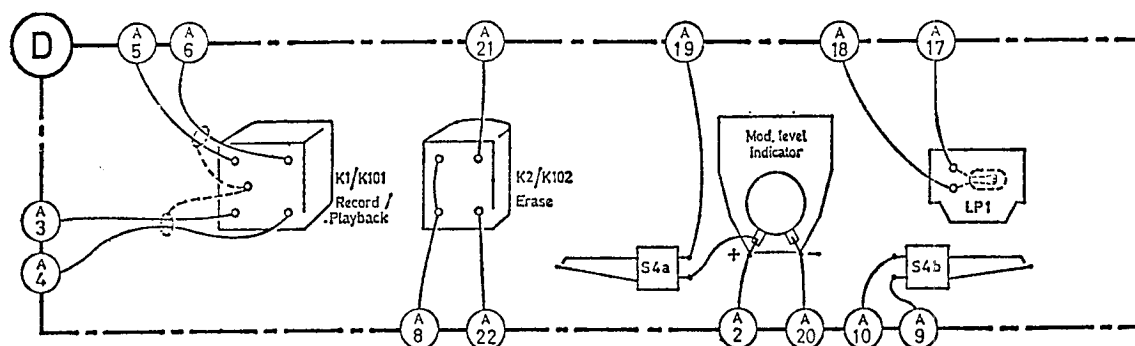
Playback voltages
Record voltages



W256c

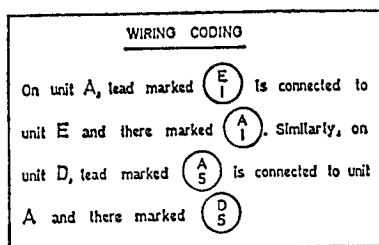
connecting leads, taking care not to bend or deform the switch blades of S4(b). When refitting the printed panel frame, ensure that the switch operating levers are correctly engaged with the switch sliders and that S4(a) and S4(b) operate properly.

Recording Bias Current: The recording bias current should be 18 mV, measured as a voltage, but may be set within the limits 10–25 mV. Switch to “Record”, set the track selector switch to “1–4” and adjust R441 so that a voltage of 18 mV, measured with an A.C. millivoltmeter, is obtained at MP1. Similarly, in track position “2–3”, the same reading should be obtained at MP2 by adjusting R442. Check the overall frequency response and if necessary make further adjustments to the bias current to obtain the response required. Reducing the bias current will increase the treble response; conversely, increasing the bias current will reduce the treble response. Should the value of bias current be below the lower limit specified, it will cause distortion at high modulation levels; if above the upper limit, it will result in poor treble response. If after adjustment, the level of bias current is outside the range specified above, a defect in the record/playback head or in the amplifier circuitry should be suspected.



NOTES:

All sockets viewed on solder tags.
Add 200 to all contact numbers on S2.
Add 300 to all contact numbers on S3.



W257d

(W257) COMPONENT LAYOUT AND
INTERCONNECTION DIAGRAM —

Modulation Level Indicator Calibration: Set the track selector switch S2 to track “1–4” (or “2–3”), turn Radio/Phono record level control R444 to maximum and depress the “Record” key only. Apply a 1 kHz signal to pin 3, Skt1, adjusting the level so that a voltage of 3 mV, measured with an A.C. millivoltmeter, is present at MP1 (or MP2). The pointer of the modulation

The diagram is a complex electronic circuit for a radio receiver. It features a grid system for component identification: horizontal labels A through 29 and vertical labels 1 through 15. The circuit includes several vacuum tubes (T4, T5, T6, T7, T8), capacitors (C1 through C70), resistors (R1 through R50), inductors (L1, L2), and a speaker (S1). Key functional areas include a tuning eye (T7), a volume control knob (T6), a microphone level control (T5), and a power supply section (T4). The diagram also shows a speaker (S1) and a tone control section (T3). The circuit is densely packed with components, and the grid system is used to locate specific parts throughout the diagram.

W257a

level indicator may be adjusted with R₄₄₆ so that it registers on the division between the red and black sectors of the scale. Remove the input signal and switch to "Record"; the meter pointer should be deflected up to a maximum of 1 mm., due to bias current.

Correction Coil L₂ (*adjusted only on replacement*): Depress the "Record" key only and apply a 1 kHz signal to pin 3, S_{kt1}, so that a voltage of 0.775 mV, measured with an A.C. millivoltmeter, is present at MP₁, with the track selector switch S₂ set to position "1-4". Change the input signal frequency to 14 kHz. The voltage at MP₁ should now read 3.5 mV; adjust correction coil L₂ for this reading, then seal it with locking paint.

Cleaning: The magnetic heads, tape guides and capstan should be cleaned at regular intervals if optimum performance is to be maintained. Remove cover for access to these parts, which can be cleaned with a soft cloth wrapped around a wooden stick and moistened with methylated spirits or industrial alcohol. Metal objects should not be allowed to come into contact with the magnetic head faces.

After approximately 500 hours of service, it is advisable to clean the following parts with methylated spirits or industrial alcohol:

Magnetic head faces; Tape guides; Capstan and pressure roller; Drive belts; Grooves in flywheel and pulleys; All friction driven surfaces; Brake shoes and braking surfaces of turntables. Clean the inside of both turntables with a soft dry brush and if necessary clean or replace pressure felt.

D.C. Voltages—Switch to "Record".

Stage	Collector	Base	Emitter
T ₁	1.35	0.62	—
T ₂	1.38	0.6	—
T ₃	1.82	0.62	0.16
T ₄	5.3	1.18	0.65
T ₅	7.6	0.8	0.65
T ₆	13.0	1.57	1.44
T ₇	—	13.0	13.1
T ₈	24.5	13.3	13.2
T ₁₀	10.8	0.1	0.78

Switch to "Playback".

Stage	Collector	Base	Emitter
T ₁	1.36	0.62	—
T ₂	1.33	0.59	—
T ₃	1.9	0.68	0.18
T ₄	5.6	1.22	0.7
T ₅	8.6	1.99	1.37
T ₆	13.25	1.6	1.47
T ₇	—	13.25	13.4
T ₈	25	13.6	13.5
T ₁₀	—	—	—